Remarks/Arguments

Initially Applicant thanks the Examiner for the courtesies extended during the telephone calls of March 7, 2008 and March 10, 2008 and for agreeing to a post-amendment Examiner Interview if needed. In the reply, claims 1, 7, 15, 21, and 29 have been amended. The claim amendments are fully supported in the originally filed specification and no new matter has been added.

Rejections under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 1-5, 7-11, 15-19, 21-25, and 29-31 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent App. Pub. No. 2003/0087673 to Walton et al. ("*Walton*") in view of U.S. Patent App. Pub. No. 2005/0233760 to Voltolina et al. ("*Voltolina*"). Applicant respectfully requests reconsideration of this rejection for at least the following reasons.

As for claim 1, claim 1 has been amended and now recites a method comprising:

> operating in a multiple input, multiple output (MIMO) mode by a transmitter device of a wireless network to communicate with a receiver device of the wireless network, the wireless network including at least one transmitter device and a plurality of receiver devices;
>
> observing both physical (PHY) layer performance of the receiver device and media access control (MAC) layer performance of the transmitter device during said MIMO mode of operation; and
>
> the transmitter device based at least on the observations switching from operating in the MIMO mode to operating in a spatial division, multiple access (SDMA) mode to communicate with the plurality of receiver devices including the receiver device, when poor MAC layer performance below a MAC layer performance threshold is observed for the transmitter device during the MIMO mode of operation of the transmitter device, even though good PHY layer performance above a PHY layer performance threshold is observed for the receiver device during the MIMO mode of operation of the transmitter device.

In the Office Action, the Examiner alleged that the combination of *Walton* and *Voltolina* taught each and every feature of previously presented claim 1. In particular, the Examiner alleged that *Voltolina* teaches the features of a transmitter device switching from operating in a MIMO mode to operating in a SDMA mode while *Walton* was cited for allegedly teaching all of the other features of previously presented claim 1

including teaching the features of "when poor MAC layer performance below a MAC layer performance threshold is observed for the transmitter device, even though good PHY layer performance above a PHY layer performance above a PHY layer performance threshold is observed for the receiver device" as recited in previously presented claim 1 More particularly, the Examiner indicated in the Office Action that such features were taught in *Walton* because *Walton* teaches "one or more sub-hypothesis may further be formed for each hypothesis, with each sub-hypothesis corresponding to specific assignments of a number of transmit antennas to the one or more terminals in the hypothesis, where the performance of each sub-hypothesis is then evaluated, and one of the evaluated sub-hypothesis is selected based on their performance." See page 4, lines 4-11 of the Office Action.

It is unclear how this particular teaching of *Walton* reads upon the recited features of previously presented claim 1 but presumably the Examiner is equating or assuming that at least one of the sub-hypothesis must be the condition "when poor MAC layer performance below a MAC layer performance threshold is observed for the transmitter device" and that at least one of the other sub-hypothesis must be the condition "even though good PHY layer performance above a PHY layer performance above a PHY layer performance threshold is observed for the receiver device" as recited in previously presented claim 1.

However, claim 1 has been amended to recite, among other things, "observing both physical (PHY) layer performance of the receiver device and media access control (MAC) layer performance of the transmitter device during said MIMO mode of operation," and the transmitter device "based at least on the observations" switching from operating in the MIMO mode to operating in a SDMA mode "when poor MAC layer performance below a MAC layer performance threshold is observed for the transmitter device during the MIMO mode of operation of the transmitter device, even though good PHY layer performance above a PHY layer performance threshold is observed for the receiver device during the MIMO mode of operation of the transmitter device," which is not taught or suggested by *Walton*. At best, *Walton* merely teaches a system for downlink scheduling between a base station (i.e., transmitter device) and multiple nodes

(i.e., receiver devices) of a wireless network, where the multiple nodes includes dedicated MIMO nodes and dedicated SIMO (i.e., SDMA) nodes, the downlink scheduling being based on comparison of different sub-hypothesis reflecting different scenarios, the different scenarios being based on past or historical data, and selecting the best sub-hypothesis for use in the downlink scheduling of the dedicated MIMO nodes and dedicated SDMA nodes. There is, however, **no teaching or suggestion** anywhere in *Walton* of a transmitter device, based on observations made during a MIMO operation of the transmitter device, switching from operating in the MIMO mode to operating in a SDMA mode "when poor MAC layer performance below a MAC layer performance threshold is observed for the transmitter during the MIMO mode of operation of the transmitter device, even though good PHY layer performance above a PHY layer performance threshold is observed for the receiver device during the MIMO mode of operation of the transmitter device," as recited in currently amended claim 1. *Voltolina* also **does not teach or suggest** such features as *Voltolina* merely teaches a wireless network switching between operating in a point-to-point distribution (e.g., MIMO) to operating in a point-to-multipoint distribution (e.g., SDMA) when certain conditions arises such as when the number of user terminals is greater than or below a predetermined number. For at least this reason, amended claim 1 is patentable over *Walton* in view of *Voltolina* under 35 U.S.C. § 103.

If the Examiner chooses to maintain this rejection of amended claim 1 then Applicant respectfully requests that the Examiner indicate, **with specificity**, how the combination of *Walton* and *Voltolina* teaches or suggests each and every feature of amended claim 1.

Amended independent claim 15 has features similar to those of amended claim 1. Thus, for the reasons that claim 1 is patentable over *Walton* in view of *Voltolina*, as described above, claim 15 is likewise patentable over *Walton* in view of *Voltolina*.

Amended independent claims 7, 21, and 29 have features similar to those of amended independent claims 1 and 15 except that these claims include features that call for switching from SDMA to MIMO instead of the other way around as recited in claims 1 and 15. Thus, for at least the same reason that claims 1 and 15 are patentable

over *Walton* in view of *Voltolina*, claims 7, 21, and 29 are likewise patentable over *Walton* in view of *Voltolina*.

Claims 2-5, 8-11, 16-19, 22-25, and 30-31 depend from amended independent claims 1, 7, 15, 21, and 29, incorporating their recitations. Thus, for at least the reasons that claims 1, 7, 15, 21, and 29 are patentable over *Walton* in view of *Voltolina*, as described above, claims 2-5, 8-11, 16-19, 22-25, and 30-31 are likewise patentable over *Walton* in view of *Voltolina*.

CONCLUSION

In view of the foregoing, Applicant respectfully submits that all pending claims are in condition for allowance. Early issuance of the Notice of Allowance is respectfully requested.

Please charge any shortages and credit any overages to Deposit Account No. 500393.

Respectfully submitted,
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Dated: 3/12/08

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